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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,675	10/06/2004	George R. Pettit	12504.528	4965

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EXAMINER	
KEYS, ROSALYND ANN	
ART UNIT	PAPER NUMBER
1621	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,675	PETTIT ET AL.	
	Examiner	Art Unit	
	ROSALYND KEYS	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,14,18 and 24-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,14,18 and 24-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 4, 14, 18, and 24-28 are pending.

Claims 4, 14, 18 and 24-28 are rejected.

Claims 1-3, 6-13, 15-17 and 19-23 are cancelled.

Response to Amendment

Claim Objections

2. The objection to claims 20, 21 and 23 is withdrawn, since these claims have been cancelled.

Claim Rejections - 35 USC § 112

3. The rejection of claims 19-23 under 35 U.S.C. 112, second paragraph is withdrawn, since these claims have been cancelled.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 24-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The scope of the new claims is broader than the original specification.

In claim 24 step (b) it is disclosed to separate the products of step (a) to obtain 3-(tert-butyldimethylsiloxy)-5-hydroxybenzaldehyde and in step (d) it is disclosed to purify the oil produced in step (c). However, the specification only discloses separation of the products of step (a) and purification of the products of step (c) by flash column chromatography (see page 14, lines 4 and 16). Also in claim 24, step (c) it is disclosed that the sieves are rinsed with solvent. However, the specification only provides support for ethyl acetate (see page 14, line 15). In claim 24, step (f) it is disclosed to deprotect and then separate the product of step (e). However, the specification only discloses separation by gravity column chromatography (see page 15, line 16).

In claims 25, 27 and 28 step (a) it is disclosed to protect 4-hydroxybenzaldehyde to obtain a solution of 4-(tert)-butyldimethylsiloxy-benzaldehyde and (c) pouring the reaction mixture of step (b) into water, extracting with solvent. However, the specification discloses protecting 4-hydroxybenzaldehyde by adding Hunig's base (see page 11, line 20) and pouring the reaction mixture into water and extracting with dichloromethane (see page 12, line 1).

In claim 25 step (g) it is disclosed to separate the products of step (f) to obtain compound 14c. However, the specification only discloses obtaining compound 14 c via separation by gravity column chromatography (see page 13, lines 11 and 12).

In claim 26 step (a) it is disclosed to react 4-methoxybenzyltriphenylphosphonium bromide and 3, 5-di (tert-butyldimethylsilyloxy)-benzaldehyde. However, no such step is disclosed in the specification.

In claims 27 and 28 step (i) it is disclosed to extract with solvent and (j) subject the organic phase from step (i) to separation. However, it is disclosed in the specification to extract with ethyl acetate and separate with column chromatography (see page 17, lines 6-8).

In claim 28 step (i) it is disclosed to wash with solvent and (m) to form a solution of the solid and a solvent. However, the specification only discloses washing with ethyl acetate and forming a solution with ethanol (see page 17, lines 19 and 20).

Allowable Subject Matter

6. The indicated allowability of claims 4, 14 and 18 is withdrawn in view of the newly discovered reference(s) to Ghai et al. (US 2002/0028852 A1), Seyedi et al. (US 6,743,937 B2) and Orsini et al. (Carbohydrate Research, Vol. 301, Issue 3-4, June 1997, pp. 95-109). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 4, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghai et al. (US 2002/0028852 A1) in view of Seyedi et al. (US 6,743,937 B2) and further in view of Orsini et al. (Carbohydrate Research, Vol. 301, Issue 3-4, June 1997, pp. 95-109).

Ghai et al. disclose a composition comprising an analog of resveratrol (3,5,4'-trihydroxystilbene) and a method of treating cancer in an animal which comprises administration of the composition (see entire disclosure, in particular paragraphs 0015, 0016, 0026, 0031 and 0032).

Ghai et al. differ from the instant claims in that the resveratrol analog does not contain the phosphate group.

Seyedi et al. teach the compound combretastatin A-4, which is similar in structure and function as the resveratrol analogs disclosed by Ghai et al. (see entire disclosure, in particular column 1, line 33 to column 2, line 47 and column 4, line 15 to column 14, line 59). It is taught to phosphorylate the compound combretastatin A-4 in order to increase its water solubility (see column 2, lines 29-47).

Orsini et al. disclose synthesis of biologically active polyphenolic glycosides (combretastatin and resveratrol series) (see entire disclosure). The compounds are synthesized similarly.

One having ordinary skill in the art at the time the invention was made would have found it obvious to phosphorylate the resveratrol analogs of Ghai et al., as taught by Seyedi et al., with a reasonable expectation of success, since the compounds are similar in structure and have been shown by Orsini et al. to undergo similar synthesis. Further, the skilled artisan would have been motivated to phosphorylate the resveratrol analog of Ghai et al., as taught by Seyedi et al., in order to improve its water solubility.

11. Claims 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orsini et al. (Carbohydrate Research, Vol. 301, Issue 3-4, June 1997, pp. 95-109). Orsini et al. disclose synthesis of biologically active polyphenolic glycosides (combretastatin and resveratrol series) (see entire disclosure). The compounds are synthesized almost identical to the instant resveratrol derivatives with the exception of a few minor changes that involve either routine experimentation or operator preference,

such as a change in the sequence of steps. For example in claim 24, the use of molecular sieve and proton sponge would have been an obvious matter of operator preference, since applicant has not disclosed that the use of a molecular sieve or proton sponge solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with other means for separation and/or purification. Further a change in the sequence of adding ingredients is considered to be prima facie obvious because the time at which a particular step is performed is simply a matter of operator preference, especially since the same result is obtained regardless of when the step occurs. See Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSALYND KEYS whose telephone number is (571)272-0639. The examiner can normally be reached on M, W, F 8 am-3:30 pm; T, Th 5:30 am-7 am & 9:30 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROSALYND KEYS/
Primary Examiner, Art Unit 1621

November 6, 2008